Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-37. (Canceled)

38. (Previously Presented) An electrode for use in an electrochemical cell comprising:

a first sheet comprising a hydrogen storage material;

a second sheet separate from the first sheet, the second sheet comprising a high energy density metal that is configured to act as a hydrogen source for the hydrogen storage material on reaction with electrolyte in the cell, wherein the high energy density metal is mixed with at least one of polytetrafluoroethylene or graphite; and

a hydrogen electrocatalyst.

39. (Previously Presented) The electrode of claim 38, wherein the high energy density metal comprises Zn, Mg, Fe, or alloys or combinations thereof.

40. (Previously Presented) The electrode of claim 38, wherein the high energy density metal is mixed with polytetrafluoroethylene.

41. (Previously Presented) The electrode of claim 38, wherein the high energy density metal is mixed with graphite.

42. (Previously Presented) The electrode of claim 38, wherein the hydrogen storage material is an alloy selected from the group consisting of rare earth/misch alloys, zirconium alloys, titanium alloys, and mixtures of such alloys.

43. (Previously Presented) The electrode of claim 38, wherein the first sheet comprises polytetrafluoroethylene mixed with the hydrogen storage material.

44. (Previously Presented) The electrode of claim 38, wherein the first sheet comprises carbon mixed with the hydrogen storage material.

45. (Previously Presented) The electrode of claim 38, wherein the hydrogen storage material is a metal hydride selected from the group consisting of AB_5, AB_2, AB and A_2B, where A is a Group IIb metal, transition metal, rare-earth metal, or metal of the actinide series, and B is a metal of the transition series.

46. (Previously Presented) The electrode of claim 45, wherein:

AB_5 has hexagonal or orthorhombic structure and is $LaNi_5$ or $MmNi_5$, where Mm is a combination of La and other rare-earth elements;

AB_2 is $ZnMn_2$ with a Laves phase structure;

AB is TiFe with a CsCl structure; and

A_2B is Ti_2Ni with a complex structure.

47. (Canceled)

48. (Previously Presented) The electrode of claim 38, wherein the hydrogen electrocatalyst is a noble metal, Ni, Fe, Cr, or an alloy comprising at least one of these metals.

49. (Previously Presented) The electrode of claim 38, wherein the hydrogen electrocatalyst is in the form of a pure powder deposited on a high surface area support material.

50. (Previously Presented) The electrode of claim 49, wherein the high surface area support material is activated carbon or graphite.

51. (Previously Presented) The electrode of claim 38, wherein the first sheet further comprises the hydrogen electrocatalyst.

52. (Previously Presented) The electrode of claim 38, wherein the second sheet further comprises the hydrogen electrocatalyst.

53. (Previously Presented) The electrode of claim 38, wherein the hydrogen electrocatalyst is provided in a third sheet separate from the first and second sheets.

54. (Previously Presented) The electrode of claim 53, further comprising a mesh current collector pressed into one of the first, second, or third sheets.

55. (Previously Presented) The electrode of claim 38, further comprising a current collector pressed into the first sheet.

56. (Previously Presented) The electrode of claim 38, wherein the first and second sheets are coupled together by a resistor.

57. (Previously Presented) The electrode of claim 38, further comprising a separator between the first sheet and the second sheet.

58. (Previously Presented) The electrode of claim 38, wherein the electrode comprises:
an energy carrier layer comprising the first sheet;
a catalyst layer including the hydrogen electrocatalyst;
a hydrogen absorption layer comprising the second sheet; and
at least one of a mesh current collector and a mechanical support.

59. (Previously Presented) The electrode of claim 38, wherein the high energy density metal is configured to act as an anode material.

60. (Previously Presented) The electrode of Claim 38, wherein the high energy density metal is configured to prevent corrosion of the electrode.

61. (Previously Presented) An electrochemical cell comprising:
an electrode comprising a first sheet including a hydrogen storage material and a second sheet separate from the first sheet, the second sheet including a high energy density metal that is configured to act as a hydrogen source for the hydrogen storage material on reaction with electrolyte in the cell; and
a hydrogen electrocatalyst.

62. (Previously Presented) The electrochemical cell of claim 61, wherein the high energy density metal comprises Al, Zn, Mg, Fe, or alloys or combinations thereof.

63. (Previously Presented) The electrochemical cell of claim 61, wherein the second sheet further comprises at least one of polytetrafluoroethylene and graphite.

64. (Previously Presented) The electrochemical cell of claim 61, wherein the hydrogen storage material is an alloy selected from the group consisting of rare earth/misch alloys, zirconium alloys, titanium alloys, and mixtures of such alloys.

65. (Previously Presented) The electrochemical cell of claim 61, wherein the first sheet further comprises at least one of polytetrafluoroethylene and carbon.

66. (Previously Presented) The electrochemical cell of claim 61, wherein the hydrogen storage material is a metal hydride selected from the group consisting of AB_5, AB_2, AB and A_2B, where A is a Group IIb metal, transition metal, rare-earth metal, or metal of the actinide series, and B is a metal of the transition series, wherein:

AB_5 has hexagonal or orthorhombic structure and is $LaNi_5$ or $MmNi_5$, where Mm is a combination of La and other rare-earth elements;

AB_2 is $ZnMn_2$ with a Laves phase structure;

AB is TiFe with a CsCl structure; and

A_2B is Ti_2Ni with a complex structure.

67. (Previously Presented) The electrochemical cell of claim 61, wherein the hydrogen electrocatalyst is a noble metal, Ni, Fe, Cr, or an alloy comprising at least one of these metals.

68. (Previously Presented) The electrochemical cell of claim 61, wherein the first sheet further comprises the hydrogen electrocatalyst.

69. (Previously Presented) The electrochemical cell of claim 61, wherein the second sheet further comprises the hydrogen electrocatalyst.

70. (Previously Presented) The electrochemical cell of claim 61, wherein the hydrogen electrocatalyst is provided in a third sheet separate from the first and second sheets.

71. (Previously Presented) The electrochemical cell of claim 70, further comprising a current collector pressed into one of the first, second, or third sheets.

72. (Previously Presented) The electrochemical cell of claim 61, further comprising a current collector pressed into the first sheet.

73. (Previously Presented) The electrochemical cell of claim 61, wherein the first and second sheets are coupled together by a resistor.

74. (Previously Presented) The electrochemical cell of claim 61, further comprising a separator between the first sheet and the second sheet.

75. (Previously Presented) The electrochemical cell of Claim 61, wherein the electrochemical cell is a metal hydride cell.

76. (Previously Presented) The electrochemical cell of Claim 61, wherein the electrochemical cell is a nickel metal hydride cell.

77. (Previously Presented) The electrochemical cell of Claim 61, wherein the electrochemical cell is a fuel cell.

78. (Previously Presented) The electrochemical cell of Claim 61, wherein the electrode is a negative electrode.

79. (Previously Presented) The electrochemical cell of Claim 61, wherein the high energy density metal is configured to provide self-charging for the electrochemical cell.

80. (Previously Presented) The electrochemical cell of Claim 61, wherein the high energy density metal is configured to provide increased energy capacity for the electrochemical cell.

81. (Previously Presented) The electrochemical cell of Claim 61, wherein the high energy density metal is configured to provide increased peak power for the electrochemical cell.

82. (Currently Amended) A method of producing an electrode for an electrochemical cell, the electrode comprising a hydrogen storage alloy and a high energy density metal, the method comprising:

sintering or forming with a binder a high energy density metal into a first sheet, the high energy density being configured to act as a hydrogen source for the hydrogen storage alloy on reaction with electrolyte in the cell;

forming a second sheet comprising a hydrogen storage alloy; and

pressing the first and second sheets together to form the electrode;

wherein the electrode further includes a hydrogen electrocatalyst.

83. (Previously Presented) The method of claim 82, wherein porosity is controlled by using polytetrafluoroethylene as a binder.

84. (Previously Presented) The method of claim 82, further comprising forming a third sheet comprising the electrocatalyst and the step of pressing the first and second sheets together further comprises pressing the third sheet together with the first and second sheets.

85. (Previously Presented) The method of claim 82, further comprising pressing a current collector into the first sheet or the second sheet.